

Supporting Information

New insights into the size and support effects of γ -Al₂O₃ supported Au catalyst for HCHO oxidation at room temperature

Bingbing Chen^a, Qi Zhao^a, Limei Yu^a, Mark Crocker^b, Chuan Shi^{a*}

^a State Key Laboratory of Fine Chemicals, School of Chemical Engineering, Dalian
University of Technology, Dalian 116024, China

^b Center for Applied Energy Research, University of Kentucky, Lexington, KY 40511,
USA

* Corresponding author. Tel.: +86 411 84986083;

E-mail address: chuanshi@dlut.edu.cn (Chuan Shi).

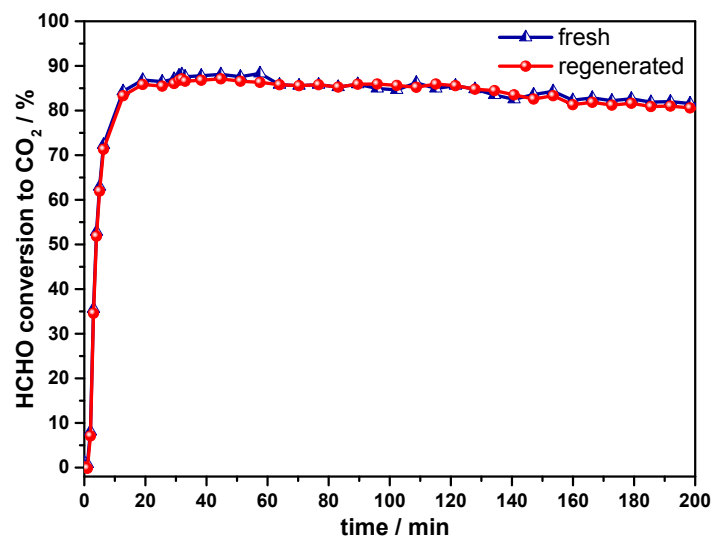


Fig. S1 Comparison of HCHO oxidation over fresh and regenerated 1 wt% Au/ γ -Al₂O₃

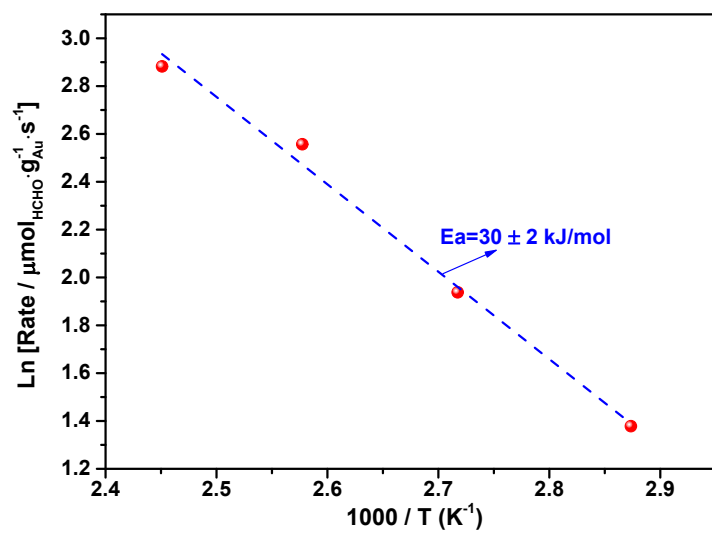


Fig. S2 Arrhenius-plot of HCHO oxidation over 1.5% Au/ γ -Al₂O₃ after NaCN leaching
Conditions: 85 ppm HCHO/21%O₂/N₂, RH=50% (25 °C)

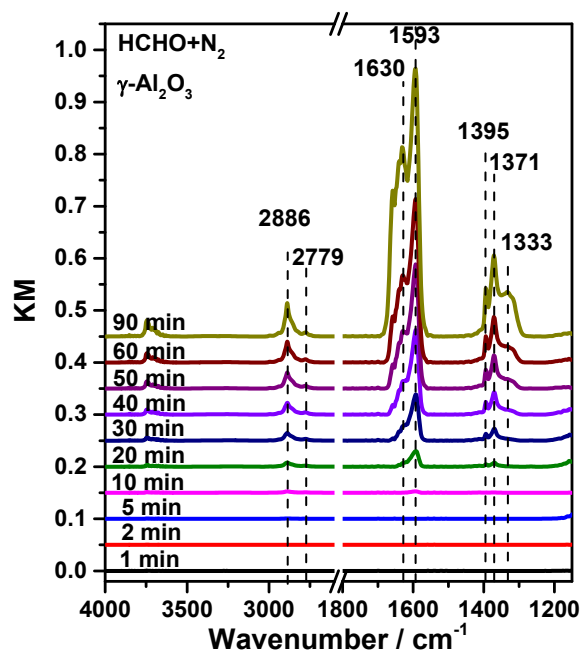


Fig. S3 In situ DRIFT spectra of HCHO adsorption on γ -Al₂O₃.
Conditions: 85 ppm HCHO/N₂ R.T.

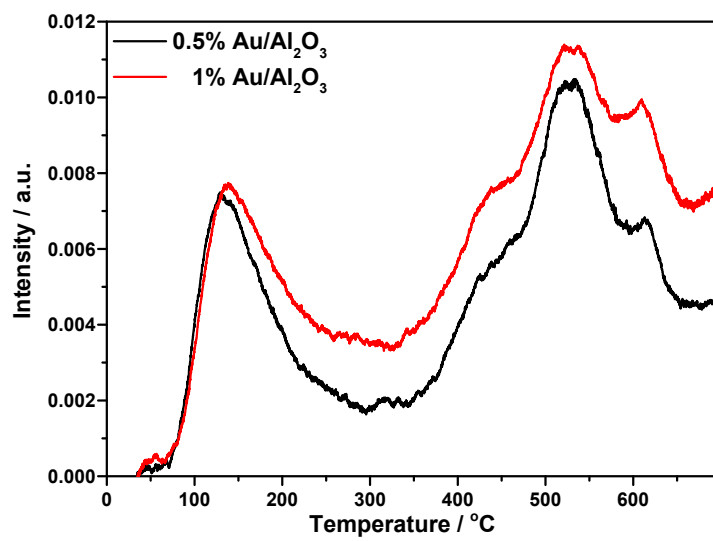


Fig. S4 O₂-TPD profile of 0.5% Au/ γ -Al₂O₃ and 1% Au/ γ -Al₂O₃

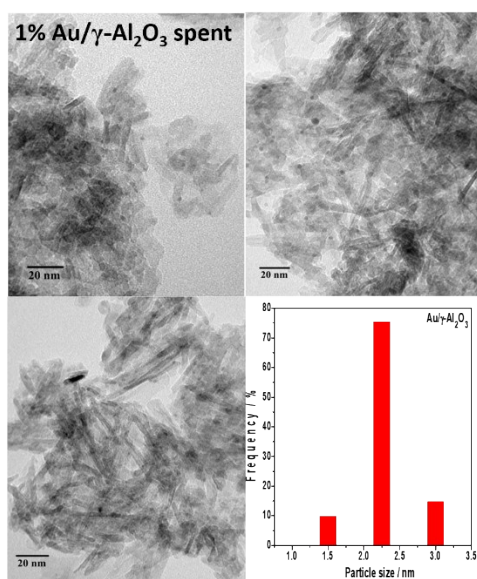


Fig. S5 TEM images of spent 1% Au/ γ -Al₂O₃ catalyst